HTIS Hazardous Technical Information Services

BULLETIN

VOL. 13 NO. 1 JANUARY - FEBRUARY 2003

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EPA Memo on Waste Generation – Issue Clarifications

Tom McCarley
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By memorandum of August 16, 2002, then EPA Director of the Office of Solid Waste, Elizabeth Cotsworth, clarified several key points for generators of hazardous waste. Although the document is titled "*Hazardous Waste Generated in Laboratories*", it is applicable to all generators, large or small, of regulated hazardous waste. The full memorandum is retrievable at http://yosemite.epa.gov/osw/rcra.nsf/23e68e459512b15f85256bf000632213/b0c8c9e419cc8db485256c6e005949b6?OpenDocument .

Issue One: ***Who is allowed to make the hazardous waste determination?***

The need for clarification arose because laboratory workers and researchers that generated the waste were not always the individuals making the waste determination; rather centralized environmental or safety/health staff were making that call. This is allowable and the memorandum goes into some discussion of the regulatory definition of "person" allowed to make waste determinations. (40 CFR 262.11). EPA may address the whole issue of ***when*** and ***where*** waste determinations are made in future rulemaking.

Issue Two*: Can Hazardous Waste Generators transfer waste between accumulation points*?

Yes. Nothing in the language of 40 CFR 262.34 prohibits such management of waste.

Issue Three*: Can Generators treat hazardous waste without a permit?*

This issue has been raised with EPA and by your calls to us at HTIS time and again. For large quantity generators (LQGs) of hazardous waste (> 1000kg/month) the regulations were silent on the treatment issue and it was

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commonly accepted that treatment of regulated waste changed one's generator only status to one of being a treatment facility that requires an operating RCRA permit. HTIS explored this situation in an earlier HTIS bulletin issue (Nov-Dec 1996). See http://www.dscr.dla.mil/htis/novdec96.htm .

The section that applies to treatment without a permit *is reprinted below* and clarifies that such non-thermal treatment of one's own hazardous waste is allowed without a RCRA permit.

The memorandum states - "EPA has consistently interpreted its regulations to allow generators to treat hazardous waste in their accumulation tanks and containers, without obtaining a permit or having interim status. This is true for both LQGs [large quantity generators] and SQGs [small quantity generators]. Of course, all generators are allowed to treat only the hazardous waste that is generated on-site. A permit would be required to store and/or treat hazardous waste that is consolidated from off-site locations. Examples of treatment that may be conducted in accumulation tanks and containers include precipitating heavy metals from solutions, and oxidation/reduction reactions.

There are **three** reasons for this interpretation.

First, we (*i.e*. EPA) discussed the relationship between storage, treatment and disposal in the preamble of the January 12, 1981, Federal Register (46 FR 2806-2808). In that preamble, we noted that treatment can occur at a permitted disposal or storage facility without affecting that facility's regulatory status. We believe that treatment activities should similarly not change the regulatory status of generators. Since the regulations do not impose additional standards for treatment when it occurs at a storage facility that requires a permit, there is no basis for regulating treatment more strictly at a storage facility which does *not* require a permit, such as a generator's accumulation area.

Second, the provisions of 40 CFR 262.34(a) for LQGs and 40 CFR 262.34(d) for SQGs require generators to comply with most of the technical standards for containers (Part 265 Subpart I) and tanks (Part 265 Subpart J) with which an interim status storage facility would have to comply. Of the provisions for treatment, storage and disposal facilities only the financial responsibility, closure/post-closure and corrective action regulations would not apply to generators that treat hazardous waste.

Third, treatment often renders waste less hazardous, or more amenable for further treatment, recycling, shipment off site, etc. A requirement for generators to obtain a permit for any on-site treatment would very likely discourage such practices.

Finally, with regard to who may treat a hazardous waste, a generator is defined as any person, by site, whose act or process produces hazardous waste. (40 CFR. 260.10). Therefore, again, any individual who is part of the person, as defined, including EH&S (Environmental, Health and Safety) personnel, is allowed to conduct treatment, provided that the individual complies with the training requirements of 40 CFR 262.34(a)(4) for LQGs , or 40 CFR 262.34(d)(5) for SQGs. Additionally, nothing in 40 CFR 262.34 precludes generators from transferring waste between tanks or containers to facilitate storage or treatment.

It should be noted, however, **that some forms of treatment by generators are not allowed without a permit**. For example, incineration is regulated by specific standards for incinerators (Part 264/265 Subpart O) and burning waste in boilers and industrial furnaces is regulated under specific standards for those units (Part 266 Subpart H).

If the waste is being treated on-site and the treatment residue is destined to be land disposed, the generator still has responsibilities under the land disposal restrictions (LDRs) program. The LDRs require that hazardous waste must be treated by a specified method or to a specified constituent concentration level before it (or its residue) may be placed in the land. The generator must know the treatment standard applicable to his/her waste and either treat to meet the treatment standard or send it to a treater to do so. *Generators who treat waste on-site to remove a hazardous characteristic must prepare a waste analysis plan if treatment occurs in units that do not require a RCRA permit* (see 40 CFR 262.34(a)(4) for LQGs, and 40 CFR 262.34(d)(4) for SQGs). In addition, there are some generator paperwork requirements associated with the LDRs (40 CFR 268.7(a)). More information about the LDR program may be found in the Land Disposal Restrictions: Summary of Requirements at – http://www.epa.gov/epaoswer/hazwaste/ldr/new.htm. Some treatment units have been and continue to be specifically excluded from permitting. For example, owners and operators of elementary neutralization units are not required to obtain a RCRA permit (40 CFR 270.1(c)(2)(v)). Similarly, many forms of on-site recycling of hazardous waste can be performed without a permit, since EPA generally does not regulate the recycling process itself. However, any accumulation of hazardous waste prior to placement in an exempt unit or prior to recycling would be regulated under 40 CFR 262.34, as discussed above."

On a related matter, for those LQGs that accumulate hazardous waste for longer than 90 days, or SQGs that accumulate hazardous waste for longer than 180 days, and therefore require a permit, the Agency recently proposed a rule that would streamline the permitting requirements for facilities that store and/or treat their hazardous waste on-site in tanks and containers (October 12, 2001; 66 FR 52192). The Agency anticipates finalizing the rule in early 2003.

As with all such EPA interpretive memoranda under RCRA, **keep in mind that one's state may have more stringent regulations that do not allow for on-site treatment by generators or other flexibility suggested by the memoranda**.

Reference:

EPA Interpretive Memorandum, August 16, 2002, Elizabeth Cotsworth, Director Office of Solid Waste to RCRA Senior Policy Advisors, EPA Regions I-X, "**Hazardous Waste Generated in Laboratories**"

New Military Specifications: Chemical Agent Resistant Coatings (CARCs)

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This article is the result of a technical inquiry from a DOD customer who asked for the National Stock Numbers (NSNs) and the related specification for water-based CARC. CARCs are polyurethane based paints and coatings that the U.S. Army has used for its tactical vehicles, artillery pieces, and supports equipment. These paints and coatings have provided superior quality, more durability and service life for military vehicles, while making them more resistant to chemical agents.

Although beneficial from a functional aspect, there are toxicity and environmental concerns associated with these paints. Specifically, isocyanates found in the polyurethane paints pose health risks along with the solvents and thinners utilized in the painting process. Hexamethylene diisocyanate (HDI), one of the constituents of CARC is both a skin and respiratory tract irritant that is released during painting or coating operations. The solvents used in CARC

formulations are also a source of irritation of the skin and mucous membranes due to their dermal contact and absorption if a user is not properly protected. In a dry state, CARC in not harmful. However, sanding and grinding causes particles to become airborne giving rise to potential inhalation concerns. The welding or cutting of CARC painted surfaces releases airborne HDI, carbon monoxide, and harmful contaminants. Because high concentrations of isocyanates cause irritation to skin and respiratory tract, emphasis is placed on the use of proper engineering and environmental controls as well as personal protective equipment during painting operations.

The U.S. Army Research Laboratory, Weapons and Materials Directorate has developed a multifunctional protective coating system that provides chemical-agent resistance, signature reduction, and improved durability for vehicles, munitions, and other equipment while maintaining compliance with environmental regulations, particularly, the U.S. Environmental Protection Agency (EPA)'s Hazardous Air Pollutants (HAPs) requirements. Published on January 30, 2002, the revised Military Specification, MIL-DTL-64159, covers water-dispersible, chemical agent resistant, aliphatic polyurethane coatings for use as a finish coat on all military tactical equipment to include ground, aviation, and related support assets. The materials are free of HAPs, as well as lead and chromate (hexavalent chromium), and have a maximum volatile organic compound (VOC) content of 220 g/L (1.8 Lb/gal) as packaged.

In conjunction with this revised specification, there is a list of qualified products that meet its requirements

DOD personnel can access the following documents on-line:

- **MIL-DTL-64159**, approved for use by all DOD services at: http://www.arl.army.mil/wmrd/coatings/CARCSpecs/MIL-DTL-64159.pdf

- **Qualified Products List** at: http://www.arl.army.mil/wmrd/coatings/CARCSpecs/QPL-64159-1.pdf

For further information on MIL-DTL-64159, DOD personnel can contact Kathy Bamberg, Army Research Laboratory Weapons and Materials Research Directorate, phone 410-306-0725/0727 or e-mail at: kbamber@arl.army.mil

References:
1. Specification for water-dispersible, chemical: http://www.arl.army.mil/wmrd/coatings/

2. Environmental Exposure Report, Chemical Agent Resistant Coating (CARC), Final Report, July 27, 2000, U.S Department of Defense, web site at: http://www.gulflink.osd.mil/carc_paint_ii/

Toxic Mold

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"The past twenty years have brought the recognition that an important factor in the health of people in indoor environments is the dampness of the buildings in which they live and work. Furthermore, it is now appreciated that *the principal biology responsible for the health problems in such buildings are fungi rather than bacteria or viruses.* Although fungi in this context have been traditionally viewed as allergens (and, in unusual circumstances, pathogens), data have accumulated to show that the adverse health effects resulting from inhalation of fungal spores are due to multiple factors. One factor associated with certain fungi is small molecular toxins (mycotoxins) produced by these fungi.

Traditionally, mycotoxins are held to be important in human and animal health because of their production by toxigenic-

fungi-associated food and feed. However, mycotoxins tend to concentrate in fungal spores, and thus present a potential hazard to those inhaling airborne spores. Toxigenic spores strongly affect alveolar macrophage function and pose a threat to those exposed. Reports have indicated that *Stachybotrys chartarum*, *Aspergillus versicolor*, and several toxigenic species of *Penicillium* are potentially hazardous, especially when the air-handling systems have become heavily contaminated.

Perhaps the most hazardous of the toxigenic fungi found in wet buildings is *S. chartarum*, a fungus known to produce the very potent cytotoxic macrocyclic trichothenes along with a variety of immuno-suppressants and endothelin receptor antagonists mycotoxins. This fungus was investigated for its association with the serious health problems of a family living in a water-damaged home in Chicago and has been implicated in several cases of building-related illness. A cluster of cases of acute pulmonary hemorrhage/ hemosiderosis was reported in Cleveland, Ohio, where 27 infants from homes that suffered flood damage became sick (nine deaths) with the illness starting in January 1993."

Mold is another name for fungi when visibly present in the indoor environment. Mold has been in the news lately due to media interest and purported involvement of toxins produced by mold in cases of sick building syndrome. Many buildings have visible mold contamination, sometimes associated with symptom complaints from building occupants. Although there are no federal regulations, some states are proposing legislation as indicated below:

***Legislative Update**: Your Guide to Indoor Environment Bills, Laws-*

The following is a special report on state and federal mold legislation, both recently enacted and currently pending. These bills and laws create task forces, direct studies, and enact toxic mold protection acts. Indiana's HB 1253, if passed, will make Indiana the second state to regulate indoor mold growth. The federal bill highlighted here (HR 5040), known as the Melina Bill or The United States Toxic Mold Safety and Protection Act, is the first federal legislation to address indoor mold contamination. It empowers the CDC and EPA to conduct research determining health effects of mold. It also directs HUD and the EPA to develop guidelines related to mold investigation and remediation including the certification of inspectors.

***State Legislation** - Mold Contamination Bills And Laws:*

Arizona –-
AZ SB 1432:
Introduced: 02-06-02
Last Action: 03-27-02
Status: Not enacted

Summary: Would create a legislative study group to consider the financial, environmental and health-related effects of indoor commercial and residential mold contamination.

California –-
AB 284:
Enacted: 01-01-02

Summary: Directs a review panel to review issues related to fungal contamination of indoor environments.

SB 662:
Enacted: 01-01-02

Summary: Makes technical changes to provisions of state law directing the State Air Resources Board to study environmental conditions (including toxic mold) of portable classrooms.

SB 732:
Enacted: 01-01-02

Summary: The Toxic Mold Protection Act.

SB 1763:
Introduced: 02-17-02
Last Action: 06-16-02
Status: Pending

Summary: Would direct the insurance department to examine availability and adequacy of commercial and residential property coverage for mold damage. Passed Senate in May. Referred to Assembly by Insurance committee in mid-June.

SB 2684/AB 2674:
Introduced: 02-22-02
Last Action: 02-22-02
Status: Pending

Summary: Express legislative intent to limit liability of school districts for personal injury or wrongful death claims arising from toxic mold on school premises.

Indiana –-
HB 1253:
Introduced: 01-14-02
Last Action: 02-11-02
Status: Not enacted

Summary: Establishes mold standards and directs the department of health to offer recommendations regarding toxic mold exposures limits.

Maryland –-
SB 283
Enacted: 07-01-02

Summary: Establishes a Task Force on Indoor Air Quality (includes toxic mold).

Massachusetts –-
SB 2353
Introduced: 05-23-02
Last Action: 06-11-02
Status: Pending

Summary: Would authorize a task force to consider toxic mold exposure limits in indoor environments, assess public health risks and adopt protections for homeowners and consumers.

Nevada –-
SB 584
Enacted: 06-14-01

Summary: Authorizes issuance of bonds to finance capital improvements for toxic mold remediation and prevention.

New Jersey –-
SR 77
Adopted: 05-03-01

Summary: A Senate resolution to urge the state develop methods to help residents identify mold and develop strategies to address it.

New York –-
SB 5799
Introduced: 10-03-01
Last Action: 01-09-02
Status: Pending

Summary: Creates the Toxic Mold Protection Act, including a taskforce (with representatives of the insurance industry) to advise the department of health on exposure limits to assessment standards, and remediation.

AB 10610:
Introduced: 03-26-02
Last Action: 05-23-02
Status: Pending

Summary: Enacts the toxic mold protection act, directs the department of health to convene a task force which shall advise the department on development of standards with regard to toxic; directs the task force to consider the feasibility of adopting permissible exposure limits to mold in indoor environments; requires that the department shall report to the legislature.

Pennsylvania –-
SR 171
Introduced: 03-11-02
Last Action: 06-11-02
Status: Pending

Summary: Would urge the insurance department to create a task force to study the effects of toxic mold.

HB 2652:
Introduced: 05-13-02
Last Action: 05-13-02
Status: Pending

Summary: Would develop a program to examine and test indoor residential air quality. Would also provide for detection of biological substances, including toxic molds, which could harm human health.

Federal Legislation –-
"The Melina Bill"

While designated with consumers foremost in mind, this landmark bill with sweeping implications for

for Industrial Air Quality professionals and professional remediators. The complete bill can be downloaded from the Internet at www.house.gov.

Major Provisions of the Bill include –-

Title I - *Research and Public Education*

The Bill directs the U.S. Environmental Protection Agency (EPA) and Centers for Disease Control (CDC) to examine the effects of different molds on human health and develop accurate scientific information on the hazards presented by indoor mold. It also directs EPA and the Department of Housing and Urban Development (HUD) respectively, to establish guidelines that identify conditions that facilitate indoor mold growth and measures that can be implemented to prevent such growth. The guidelines will also address mold inspection, testing, and remediation. In addition, this Bill asks EPA and HUD to establish guidelines for certifying mold inspectors and remediators. The guidelines will help identify hazards associated with inspection and remediation and the steps that should be taken to minimize the risk to human health. The Bill authorizes programs to educate the public about the dangers of indoor mold. An informed public will be in a better position to avoid mold hazards, prevent mold growth, and respond to appropriately when mold growth occurs.

Title II - *Housing and Real Property Provisions*

The Bill requires mold inspections for multi-unit residential property and mold inspections for all property that is purchased or leased guaranteed by the federal government. The Bill also requires mold inspections in public housing. In addition, the Bill requires that local jurisdictions modify building codes to minimize mold hazards in new construction.

Title IV – *Indoor Mold Hazard Assistance*

The Bill authorizes grants for mold removal in public buildings.

Title V - *Tax Provisions*

The Bill authorizes tax credits for inspection and/or remediation of mold hazards.

Title VI - *National Toxic Mold Insurance Program*

The Bill creates a National Toxic Mold Insurance Program administered by the Federal Emergency Management Agency (FEMA) to protect homeowners from catastrophic losses. Many homeowners are finding that insurance companies will not offer adequate coverage for mold.

Title VII - *Health Care Provisions*

The Bill enables States to provide Medicaid coverage to secure adequate health care.

References:
1. Information Paper, Health Effects of Mold Exposure, 28 Feb 02, Dr. M. Cloeren, USACHPPM
2. USEPA, Indoor Environment Management, "Children's Health Initiative: Toxic Mold, 26 June 2002
3. Indoor Environment Connections, " Legislative Update: Your Guide to Indoor Environment Bills, Laws which appeared in Aerotech Laboratories' IAQ Tech Tip Program, 15 August 2002

New DOT Rules For Infectious Substances

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On August 14, 2002, the Research and Special Programs Administration (RSPA) published a final Department of Transportation (DOT) rule applicable to the transportation of infectious substances (hazard class Division 6.2), including regulated medical waste (RMW) under Docket HM-226 entitled "Hazardous Materials: Revision to Standards for Infectious Substances." The final rule,

effective February 14, 2003, incorporates the following changes to the hazardous materials regulations (HMRs):

1. New classification criteria for infectious substances based on a defining criteria developed by the World Health Organization (WHO) and consistent with standards contained in the United Nations (UN) Recommendations and the International Civil Aviation Organization (ICAO) Technical Instructions.

Explanation: WHO defines four risk groups for infectious substances based on: 1) pathogenicity, 2) mode and ease of transmission, 3) degree of risk to individuals and communities, and 4) reversibility of the disease through known and effective preventative agents and treatment. **There is no relationship between a Risk Group and a Packing Group**. The WHO risk groups are considered a useful tool for assessing the degree to which specific pathogens should be regulated in transportation, based on the potential risk to transportation workers and the general public.

Risk Group 1 –- organisms pose no or very low individual or community risk. A material containing Risk Group 1 organisms is not subject to the requirements of the HMRs.

Risk Group 2 –- organisms pose moderate individual risk and low community risk.

Risk Group 3 –- organisms pose high individual risk and low community risk.

Risk Group 4 –- organisms pose high individual risk and high community risk.

2. Revised packaging requirements for Division 6.2 materials consistent with international performance standards.

Explanation: Previously, the HMRs required an infectious substance for transportation to be packaged in a triple packaging that includes a water-tight primary receptacle, a water-tight secondary packaging, and an outer packaging. The primary receptacle or secondary packaging must be capable of withstanding, without leakage: 1) an internal pressure that produces a pressure differential of not less than 95kPa (14 psi); and 2) temperatures in the range of -40°C to +55°C (-40°F to +131°F). The triple packaging must be capable of passing the performance tests specified in 49CFR178.609.

The revised packaging and performance tests requirements for infectious substances are intended to make the HMR requirements consistent with the UN Recommendations and ICAO Technical Instructions. For example DOT:

–-Requires packaging manufacturers to mark packagings represented as conforming to the specifications for infectious substances packagings in the HMR consistent with UN marking requirements.

–-Requires packaging manufacturers to retain packaging design qualification records and to retest packagings every 24 months.

–-Replaces the current requirement for a water immersion test with a water-spray test that simulates exposure to rainfall, as required by the ICAO Technical Instructions.

–-Incorporates the selective testing provisions in the UN Recommendations and ICAO Technical Instructions to allow variations in the primary receptacles within the secondary packaging without further testing of the completed package if an equivalent level of performance is maintained.

3. Revised materials of trade exceptions to include certain diagnostic specimens, biological products, and RMW.

Explanation: Previously,

under 49CFR173.6 materials of trade (**MOTS**), hazardous materials carried by private motor carriers engaged in a principal business other than transportation, such as lawn care, plumbing, welding, and door-to-door sale of consumer goods were permitted. The MOTS exception limits the maximum gross weight of materials of trade that may be carried on a motor vehicle and includes minimum packaging and hazard communication requirements.

The **final rule expanded the MOTS exceptions** to include certain biological products, diagnostic specimens, and RMW, including cultures and stocks to be transported by private carriage as materials of trade. **The MOTS exceptions do not apply to materials known to contain or suspected of containing infectious substances in Risk Group 4.** Additionally, RMW generated through home treatment of medical conditions by professional health care providers and diagnostic laboratories also falls under the MOTS exception. The providers remove the waste and transport it elsewhere for disposal.

The total exception from HMR for medical waste generated from households as provided in 49CFR173.134 should not be confused with the MOTS exception. The total exception for medical waste generated from households applies to waste collected by local sanitation workers along with trash, garbage, and other non-medical household waste and transported in accordance with applicable state or local requirements.

The final rule is also adding performance requirements for combination packagings authorized under the MOTS exception for transportation of Division 6.2 materials.

4. New packaging and hazard communication requirements for shipments of diagnostic specimens consistent with international requirements. Diagnostic specimens transported in dedicated motor vehicles by private or contract carriers are excepted from most requirements of the HMR.

Explanation: A diagnostic specimen means any human or animal material (except live infected human or animal) including, but not limited to, excreta, secreta, blood, blood components, tissue and tissue fluids being transported for purpose of diagnosis.

Diagnostic specimens being prepared for transport for diagnostic purposes are regulated under the revised HMR and are consistent with packaging requirements in the UN Recommendations. ***Diagnostic specimens*** meeting the definition of a ***Risk Group 4 material are classed and transported as Division 6.2 materials, UN 2814 or UN 2900***. A **new entry** "***Diagnostic Specimen***" under **Division 6.2** is added in the Hazardous Materials Table for those diagnostic specimens meeting the definitions of ***Risk Group 2 or 3 but*** there is ***no UN number, hazard warning label, or packing group assignment***. The diagnostic specimens under this proper shipping name must be packaged in primary receptacles packed inside a secondary packaging to preclude breakage, punctures, or leakage. For liquids, there must be sufficient absorbent material to absorb the entire contents of the primary receptacle, and the secondary packaging must be secured in outer packaging with suitable cushioning material. The completed package must be marked with the words "**Diagnostic specimen**", and it must be capable of passing a drop test from a height of at least 1.2 meters (3.9 feet). *No other marking or labeling is required, nor are shipping papers required*. Offerors and transporters of diagnostic specimens do not need formal training as set forth in the HMR but they must know about the requirements in 49CFR173.199.

For liquid diagnostic specimens transported by aircraft, either the primary

receptacle or the secondary packaging must be capable of withstanding an internal pressure producing a pressure differential of at least 95kPa (14 psi). Additionally, diagnostic specimens transported on-board aircraft are subject to the incident reporting requirements in Sections 171.15 and 171.16.of 49CFR. However, diagnostic specimens shipped in accordance with these provisions would not be subject to HMR requirements for notification-of-pilot in command.

In addition to the MOTS exception described on page 9, diagnostic specimens are not subject to HMR requirements when transported by private or contract couriers in dedicated vehicles. ***Waste diagnostic specimens*** (i.e. diagnostic specimens that meet the definition of a RMW***) may not be transported under the exceptions for the transportation of diagnostic specimens***. Waste diagnostic specimens lose their identity as diagnostic specimens for purposes of the HMR, and must be transported in accordance with the HMR requirements applicable to RMW. Additionally, diagnostic specimens shipments using dry ice are subject to the applicable requirements in paragraph 49CFR173.217.

5. Modification of the previous exception from requirements in the HMR for biological products. This exception is limited to biological products, including experimental products, subject to Federal approval, permit, or licensing requirements, such as those required by Food and Drug Administration (FDA) or the United States Department of Agriculture (USDA).

Explanation: Previously, biological products were excepted from the HMRs provided these products met the requirements of U.S. Department of Health and Human Services (HHS) or U.S. Department of Agriculture (USDA) regulations governing the transfer of biological products as found in 9CFR (Animal and Plant Health Inspection Services (APHIS) of the USDA) and 21CFR (Food and Drug Administration (FDA) of the HHS).

In this final rule, the DOT revised the definition and exceptions of biological products. Now ***a biological product includes a material manufactured and distributed in accordance with one of the following provisions***: 9CFR part 104, 21CFR parts 312, 612-680, or 812. A biological product meeting the definition of a Risk Group 2, 3, or 4 infectious substance must be classified as infectious substances, Division 6.2, and packaged in specification packagings authorized for infectious substances transportation unless otherwise excepted.

A biological product including an experimental product or component of a product that meet the definition of a Risk Group 1 or subject to Federal approval, permit, or licensing requirements for use under FDA or USDA is excepted from HMR requirements. Blood collected for blood transfusions or for the preparation of blood products, blood products intended for transplant, and tissues and organs intended for transplant are also excepted from HMR requirements. Likewise diagnostic specimens, and biological products are not subject to HMRs when transported in a private or a contractor dedicated motor vehicle designated to transport diagnostic specimens or biological products.

When biological products become waste, and contain or are suspected of containing an infectious substance, they must be transported in accordance with the HMRs applicable to a RMW. Additionally, biological products shipments using dry ice are subject to the applicable requirements noted in 49CFR173.217.

For consistency with UN

Recommendations and ICAO Technical Instructions, a Special Provision A81 is added to 49CFR172.101 to except from aircraft, quantity limits of body fluids (e.g., blood, plasma, urine, semen, saliva, spinal fluid, amniotic fluid, and the like) packed in primary receptacles not exceeding one liter and in outer packagings not exceeding four liters.

6. New bulk packaging options for the transportation of RMW, based on current exemption provisions.

Explanation: A waste or reusable material containing or suspected of containing an infectious substance in Risk Group 2 or 3 (generally generated by health care and/or research facilities) is to be shipped as a RMW, Division 6.2 (UN2814 or UN2900), and packaged only in packing group II performance level packagings. A *RMW is generated in the diagnosis, treatment, or immunization of human beings or animals; research on the diagnosis, treatment, or immunization of human beings or animals; or the production or testing of biological products.* And a RMW meeting the definition of a Risk Group 4 infectious substance must be classified as an infectious substance, Division 6.2, and packaged in specification packagings authorized for infectious substance transportation transportation unless otherwise excepted.

To ensure consistency with the international regulations and to provide the broadest selection of authorized bulk packagings, this final rule is authorizing Large Packagings, wheel cart (Cart) and certain non-specification bulk containers for use as outer packagings for the transportation of a RMW. A Large Packaging is an intermediate bulk packaging containing one or more articles or inner packagings consistent with the requirements of the UN Recommendations and designed for mechanical handling; and having a capacity greater than 400 kg (882 lbs.) or 119 gallons (450 liters), but not exceeding 3 cubic meters in volume. A Cart, however, is a solid (metal, plastic, or fiberglass) one-piece body with a lid to prevent water intrusion or material leakage during transport and having a capacity not exceeding 437 gallons (1655 Liters).

Inner packagings for a liquid RMW inside Large Packagings, Carts, or Bulk Outer Packaging (BOP) must be rigid, leak resistant, puncture resistant, break resistant, impervious to moisture, and sealed to prevent leakage. A liquid RMW must not be placed in an inner packaging greater than of 5 gallons (19L).

Sharps as RMW transported in Large Packaging, Cart, or BOP must be packaged in a puncture-resistant inner packaging (sharps container). The sharps container capacity must be in a range of 2 to 40 gallons. A sharps container with a capacity of 20 gallons or less must be puncture resistant, but need not be capable of passing the Part 178 performance tests. A plastic film bag not exceeding 46 gallons (175 L) capacity and meeting performance and test requirements for impact and tear resistance is also authorized as an inner packaging for a solid RMW to be transported in a Large Packaging, Cart, or BOP. A filled plastic film bag may not weigh more than 10 kg (22 pounds).

Effective October 1, 2003, all inner packaging inside a Large Packaging, Cart, or BOP must be durably marked or tagged with the name and location (city and state) of the offeror, except when the entire contents of the Large Packaging, Cart, or BOP originates at a single location and is delivered to a single location.

Reference
Final rule, 14 August, 2002, (67FR53118) and NPRM, January 22, 2001 (66FR6941)

UN "Orange Book Available on WEB

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The UN Recommendations on the Transport of Dangerous Goods, Model Regulations, 12th Revised Edition (Orange Book) and corrigenda are accessible at - http://www.unece.org/trans/danger/publi/unrec/12_e.html. From this page, one can view and download the different parts in portable document format (pdf). The English version of this publication is also available on CD-ROM.

The United Nations Economic and Social Council's Committee of Experts on the Transport of Dangerous Goods has developed these Recommendations in the light of technical progress, the advent of new substances and materials, the exigencies of modern transport systems and, above all, the requirement to ensure the safety of people, property and the environment. **Governments and international organizations concerned with the regulation of dangerous goods in transport are the parties to whom the recommendations are addressed**. They do not apply to the transport of dangerous goods in bulk, which, in most countries, are subject to special regulations.

The Transport of Dangerous Goods Model Regulations are contained in a Annex to the Recommendations. **The Model Regulations aim at presenting a basic scheme of provisions that will allow for the uniform development of national and international regulations governing the various modes of transport; yet they remain flexible enough to accommodate any special requirements that might have to be met. The Committee of Experts expects that governments, intergovernmental organizations and other international organizations, will conform to the principles laid down in the Model Regulations when they revise or develop regulations for which they are responsible, thereby contributing to a worldwide harmonization**. The new structure, format and content should be followed to the greatest extent possible in order to create a more user-friendly approach, hence facilitating the work of enforcement bodies and reducing administrative burdens. Although only a recommendation, the Model Regulations have been drafted in the mandatory sense (i.e., the word "shall" is employed throughout the text rather than "should") in order to facilitate direct use of the Model Regulations as a basis for national and international transport regulations.

The scope of the Model Regulations should ensure their value for all who are directly or indirectly concerned with the transport of dangerous goods. Among other aspects, the Model Regulations cover principles of classification and definition of classes, listing of the principal dangerous goods, general packing requirements, testing procedures, marking, labeling, placarding, and transport documents. There are, in addition, special requirements related to particular classes of goods. With this system of classification, listing, packing, marking, labeling, placarding, and documentation in general use, carriers, consignors and inspecting authorities will benefit from simplified transport, handling and control protocols as well as from a reduction in time-consuming formalities. And with tasks streamlined, the obstacles to the international transport of such goods will be reduced accordingly. At the same time, the advantages will become increasingly evident as trade in goods categorized as "dangerous" steadily grows.

Since the content of the Orange Book is in the form of recommendations, and not binding regulations, one must adhere to the applicable laws of the country and/or countries from or to which HazMat is being shipped. Hopefully, states will develop their national laws based on the Model Regulation format

and recommendations delineated in the Orange Book thereby contributing to greater uniformity and harmonization in the international shipment of HazMat.

Definitive Text on Managing HazMat

Tom McElwee, Environmental Protection Specialist, HTIS

The Institute of Hazardous Materials Management (IHMM) has published a reference document for the Certified Hazardous Materials Manager (CHMM) titled: ***"Managing Hazardous Materials (A Definitive Text)", 15October2002***.

No single volume or book can provide all the information required to manage hazardous materials, but this publication is a comprehensive reference document that will enable the HazMat professional to apply a systematic approach to the performance of one's duties. Forty-four volunteer CHMMs developed the thirty-three chapters based on their "hands-on" knowledge of the areas being discussed enabling the reader to have "real world" experience at one's fingertips. Whether you are a neophyte to the HazMat field, or an "old-timer" who is looking for a convenient desk reference, you may wish to review this publication.

The IHMM is a non-profit corporation dedicated to raising the professional level of persons managing hazardous materials. In addition to managing the CHMM program, the IHMM works to improve the professional standing of CHMMs and to encourage entry of persons into the field.

For information on purchasing this text or becoming a CHMM member, one can access the following URL - http://www.ihmm.org/ or contact the Institute at: Institute of Hazardous Materials Management, 11900 Parklawn Drive, Suite 450, Rockville MD 20852, 301-984-8969

DLA Packaging Web Site

Tom McElwee Environmental Protection Specialist, HTIS

Everything you ever wanted to know about DLA/DOD packaging, but did not know where or to whom to go is at your fingertips on the web at: http://www.dscc.dla.mil/Offices/packaging/index.html. The Defense Supply Center Columbus(DSCC) hosts and maintains this useful site. In particular, the topics listed in the PACK FAZ at: http://www.dscc.dla.mil/Offices/packaging/packfaq.html contains information to pique one's interest or help in the performance of one's duties.

The DLA packaging community owes a debt of gratitude to the DSCC Packaging team for its efforts in developing this useful site.

U.S. Army's First Testing Range: UXO Detection Technology

Abdul H. Khalid, Chemical Engineer, HTIS

On October 16, 2002, the U.S. Army opened, at Aberdeen Proving Ground, MD., its first of two test ranges to collect standardized and comparable data on unexploded ordnance (UXO) detection technology. The other site, which will be at Yuma Proving Ground, AZ., is currently under construction. This new site is part of the Standardized UXO Demonstration Site Program.

This program will utilize "uniform test methodologies, procedures, and facilities to help ensure critical UXO technology performance parameters such as detection capability, false alarms, discrimination, reacquisition and system efficiency are accurate and repeatable." Because "variations in terrain, geology, weather and vegetation can affect today's technologies", this type of test range will "allow developers and users to gather data on sensor and systems performance, compare results, and project the possible cost and effectiveness of each

sensor system" while advancing the "state of UXO detection and discrimination technologies".

Three areas constitute a standardized site: 1. – a calibration lane that "allows demonstrators to test equipment, build a site library, document signal strength and deal with site-specific variables"; 2. – a blind test grid that "allows a demonstrator to operate a sensor system without platform, coordinate system or operational concerns"; and 3. – an open field site that "will document the entire system's performance in actual range operations."

Reference:
The U.S. Army Environmental Center (AEC) web site at: http://aec.army.mil/usaec/publicaffairs/update/fall02/fall0206.html

ASHRAE's New Design Guidance: Odor Control in Smoking Spaces

Abdul H. Khalid, Chemical Engineer, HTIS

A heating, ventilation, and air-conditioning system ensure thermal and cooling comfort while controlling air contaminants. The quality of the indoor air depends on the interaction of many factors: between the site, climate, building, construction materials and techniques, contaminant sources inside and outside, and human activities in a building. Challenges with Indoor Air Quality (IAQ) arise when changes in optimal operations occur or when the previously cited factors adversely affect a desired outcome.

Recently, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) approved a new ventilation guidance/standard that addresses odor control by providing new design methods for acceptable indoor air quality in a smoking environment. According to a ASHRAE news release, the American National Standards Institute (ANSI)/ ASHRAE Standard 62-2001, titled "***Ventilation for Acceptable Indoor Air Quality,***" establishes minimum ventilation rates and other requirements for commercial and institutional buildings. The design guidance, identified as Addendum 62o, was approved for publication at ASHRAE's 2002 annual meeting held on June 22-26, 2002. This Addendum addresses the use of ventilation to control tobacco smoke odors. However, it not does address health effects, but allows designers to determine the additional ventilation required when compared with what would have been provided in a comparable non-smoking area. In spaces without heavy smoking, there is an **increase in ventilation of 10 to 40 cubic feet per minute per person over the non-smoking rate**. The actual increase in ventilation depends on the smoking rate and occupancy density of the specific space.

DOD building maintenance personnel interested in the indoor air quality as well as design guidance, may contact ASHRAE, Public Relations, Atlanta, GA, phone: 404-636-8400, ext.612, Fax: 404-321-5478 or visit ASHRAE's web site at: http://www.ashrae.org

Reference:
ASHRAE News Release, July 3, 2002, August 5, 2005. Website at:http://www.ashrae.org/NEWS/2002_std62o.htm

Final Rule: EPA Approves Updated Version of Analytical Methods Under CWA

Abdul H. Khalid, Chemical Engineer, HTIS

On October 23, 2002, the U.S. Environmental Protection Agency (EPA) included updated versions of test procedures (analytical methods) used in determining chemical, radiological, microbiological pollutants and contaminants in its wastewater and drinking water regulations.

The American Society for Testing Materials (ASTM), the United States Geological Survey (USGS), the

Department of Energy (DOE), the American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF) are involved in developing the analytical methods used to comply with the Clean Water Act's (CWA) and the Safe Drinking Water Act's (SDWA) monitoring program.

According to the EPA, the approval of multiple editions of the same method will benefit the regulatory and regulated community by increasing method selection flexibility, and by allowing the continued use of time-tested procedures. **This final rule became effective on November 22, 2002**. Visit EPA's web site at: http://www.epa.gov/waterscience/methods to download or review the complete text of this Federal Register notice.

For further information on wastewater methods, DOD personnel can contact Khouane Ditthavong, with the Engineering and Analysis Division (4303T), USEPA Office of Science and Technology, 1200 Pennsylvania Ave., NW. Washington, DC 20460, 202-566-1068 (e-mail: Ditthavong.Khouane@epa.gov).
For information on the drinking water methods, one can contact Herbert J. Brass, Technical Support Center (MS 140), USEPA, Office of Ground Water and drinking, 26 West Martin I King Drive, Cincinnati, OH 45268 (e-mail: Brass.Herb@epa.gov).

Reference:
Federal Register, October 23, 2002, Vol. 67, No. 205, Page 65219-65253

HTIS TIDBITS

State Solid and Hazardous Waste Contacts

Abdul H. Khalid, Chemical Engineer, HTIS

Many states hazardous waste management regulations are often more stringent than those at the federal level. Thus, it is prudent for those involved in solid or hazardous waste activities to ascertain how those differences may affect the operations at one's installation. Herewith is a website that lists State POCs in the areas of solid and hazardous waste - http://www.epa.gov/epaoswer/hotline/states.pdf

Reference:
http://www.epa.gov/epaoswer/hotline/contact.htm

TSA –Interpretive Rule on Items Prohibited Aboard Aircraft

Tom McElwee, Environmental Protection Specialist, HTIS

This interpretive rule published in the Federal Register (see below citation and URL) provides guidance to the public on the types of property the Transportation Security Administration (TSA) considers to be weapons, explosives, and incendiaries prohibited in airport sterile areas and in the cabins of aircraft under the TSA regulations. This interpretation also provides guidance on the types of items permitted in sterile areas, the cabins of passenger aircraft, and in passengers' checked baggage.

HTIS recommends that all government travelers review this document to obtain a basic knowledge of how the TSA looks at items that are brought into airport security areas and packed in either carryon or checked luggage – http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2003/pdf/03-3736.pdf

Reference:
Federal Register: February 14, 2003 (Volume 68, Number 31)] [Page 7444-7448]

HTIS Bulletin Rolling Again

Dear Reader- In August 2002, HTIS's technical editor left the organization for another opportunity. Our alternate editor, who returned from OCONUS military duty shortly thereafter, had started to work on the Bulletin only

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to be informed of the need to serve OCONUS for a second time. Because of this personnel situation, HTIS did not produce either a Sep-Oct02 or a Nov-Dec02 Bulletin. We are getting back on track, and thank you for your understanding and patience pending the return to civilian duty of our alternate editor.
The HTIS Staff !

Pesticide Products: EPA Requires Registration Applications for New Active Ingredients.

Abdul H. Khalid
Chemical Engineer, HTIS

On November 13, 2002, the U.S. Environmental Protection Agency (EPA) issued a notice announcing receipt of applications to register pesticide products that contain new active ingredients not included in any previously registered products pursuant to the provisions of section 3(c)(4) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended.

The HTIS Bulletin is produced bimonthly. Correspondence should be addressed to Defense Supply Center Richmond, DSCR-VBC, 8000 Jefferson Davis Highway, Richmond, VA 23297.5609 or call DSN 695.5168, Commercial 804.279.5168, or Toll Free 800.848.HTIS. Our Fax is 804.279.4194. We can also be reached by e-mail at mailto:htis@dscr.dla.mil or on the Internet at http://www.dscr.dla.mil/htis/htis.htm.

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If you are presently on our mailing list and wish to make a change, please include your complete current mailing address along with your change of address.

For details on this subject, contact Joanne I. Miller, Registration Division (7505C), Office of Pesticide Programs, EPA, 1200 Pennsylvania Ave., NW. Washington, DC. 20460-or e-mail: miller.joanne@epa.gov